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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,979	12/26/2001	Kazuhito Shimomura	P 290560 T2TT-01S0441-1	7810
909	7590	05/02/2006	EXAMINER RODRIGUEZ, GLENDA P	
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 2627	PAPER NUMBER

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/025,979

Applicant(s)

SHIMOMURA ET AL.

Examiner

Glenda P. Rodriguez

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 8 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 8 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/09/2006</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 8, ~~9~~ and 23, ~~24~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker (US Patent No. 6, 373, 647) in view of Tanaka (US Patent No. 5, 486, 967).

Regarding Claim 1, Baker teaches a disk drive comprising:

A disk medium (See Fig. 1);

A read head constructed and arranged to read a magnetic recorded signal from the disk medium (Fig. 1, Element 15, herein it teaches an MR head.);

A preamplifier circuit including a read amplifier constructed and arranged to amplify a read signal output from the read head, and an adjusting circuit constructed and arranged to adjust a frequency of the signal output from the read amplifier, the adjusting circuit including a programmable filter configured to set the low cut-off frequency of the recording frequency of the disk medium and to remove frequencies in the amplified signal lower than the cut-off frequency (See Fig. 2, Element 110, which is a read preamplifier and Element 140 which is an adjustable or programmable low pass filter that can be programmed to cut off low frequencies as taught in Col. 5, L. 29-65).

However, Baker does not explicitly teach wherein the medium is a perpendicular magnetic medium. Tanaka teaches a perpendicular magnetic medium in the Abstract and Fig. 4, which

Art Unit: 2627

further has a preamplifier and a read data channel as taught in Fig. 4, Elements 101, and 102, Fig. 50, Element 1004 and Col. 31, L. 5. Tanaka et al. also teaches so as to reproduce a read signal rectangular waveform read by the read head according the waveforms according to Figs. 8-10 as described in the Description of the Drawings (You can also see in the Applicant's Specification under Background of the Invention, wherein the Applicant has admitted that a perpendicular medium reproduces rectangular waveforms in Page 2, L. 10-13). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Baker's invention with the teaching of Tanaka to utilize a perpendicular magnetic media because perpendicular magnetic media can be recorded with a higher data density than with longitudinal magnetic media, therefore being able to record more data.

Regarding Claim 3, the combination of Baker and Tanaka teach all the limitations of Claim 1. However, the combination does not explicitly teach wherein the adjusting circuit comprises a filter circuit constructed and arranged to adjust the low cut-off frequency to 50 kHz or less or in range of from 1/2000 or less of the maximum recording frequency of the disk medium to a DC level. One of ordinary skill in the art would have been motivated to have adjusted the low cut-off frequency in range of from 1/2000 or less of the maximum recording frequency of the disk medium in order to optimize the data signal being reproduced in the medium since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set

Art Unit: 2627

forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding Claim 8, Baker teaches a preamplifier device for a disk drive including a disk medium, comprising:

A read amplifier constructed and arranged to amplify a read signal output from the read head (Element 140);

However, Baker does not explicitly teach wherein the device is a perpendicular medium. Tanaka et al. teaches this feature in the Abstract. However, the combination of Baker and Tanaka et al. does not explicitly teach wherein the adjusting circuit comprises a filter circuit constructed and arranged to adjust the low cut-off frequency to 50 kHz or less or in range of from 1/2000 or less of the maximum recording frequency of the disk medium to a DC level. One of ordinary skill in the art would have been motivated to have adjusted the low cut-off frequency in range of from 1/2000 or less of the maximum recording frequency of the disk medium in order to optimize the data signal being reproduced in the medium since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Art Unit: 2627

Regarding Claim 23, the combination of Baker and Tanaka teaches all the limitations of Claim 1. The combination further teach wherein the adjusting circuit such that wave deformation of the read signal is reduced as taught by Baker, wherein it presents a filter adjusting circuit in order to prevent baseline jumps of overshoots in Col. 3, L. 35-45.

### ***Response to Arguments***

Applicant's arguments filed 02/09/06 have been fully considered but they are not persuasive. The Applicant has amended the Claim 1 in which a new limitation was added: "so as to reproduce a read signal waveform of rectangular waveform read by the read head". However, Tanaka et al. teaches this feature if Figs. 8-10. Also, the Applicant's Specification, under Background of the Invention, admit as prior art that perpendicular mediums read signal waveform of rectangular waveform in Page 2, L. 10-13. Hence, Claim 1 remains rejected under Baker and Tanaka et al.

Regarding Claim 8, the Applicant has amended the Claim in which to add the characteristic of the low cut-off frequency range of  $1/2000$  of the recording frequency. However, the rejection of Baker and Tanaka et al. still stands due to the reasons given herein.

Examiner acknowledges that Claims 2, 4-7, 9-22 and 24 are cancelled.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5, 446, 598 to Takayama, wherein it teaches the feature of the fraction of the recording frequency to the cutoff frequency in Col. 4, L. 44-50.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

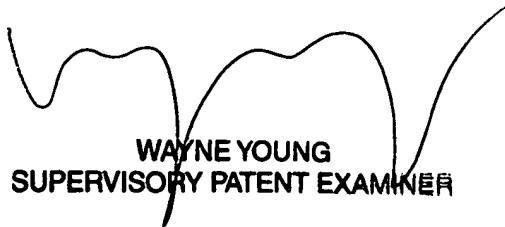


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Application/Control Number: 10/025,979  
Art Unit: 2627

Page 7

04/24/06



WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER